

BREAST CANCER ASSOCIATED WITH PREGNANCY

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THE ASSOCIATION of breast cancer with pregnancy is an infrequent one, and whilst many reports in the past suggested that such an association led to an almost hopeless situation, more recent re-appraisal indicates that where clinical findings are identical the prognosis may be no different from that of a similar group of non-pregnant breast cancer patients. It is suggested, indeed, that in some circumstances pregnancy can have a favourable influence on the prognosis and it is emphasised that radical or curative treatment should be attempted whenever possible. Where pregnancy complicates breast cancer, however, it must be accepted that there are many additional problems facing the surgeon, gynaecologist, radiotherapist and family doctor. Should the pregnancy be terminated? Should the young woman treated for breast cancer be advised against subsequent pregnancies? Obviously, many factors other than purely clinical considerations must be taken into account and these, together with the infrequency of the condition and the degree of individualisation, necessarily plays havoc with any attempt to determine a treatment policy. As further reports appear in the literature, however, it becomes possible to indicate more positively what treatment measures and factors may influence the prognosis and this present article reviews our experience in the Northern Ireland Radiotherapy Centre over an eleven year period. The cases are discussed and compared with similar groups already reported.

INCIDENCE

The figure most often quoted is that of T. T. White (1958) who, reviewing the world literature, states that three cases of carcinoma of the breast occur per every ten thousand pregnancies. In Northern Ireland over eleven years 45 cases of breast cancer occurring in pregnancy and lactation were registered at the Radiotherapy Centre whilst there were 337,000 births in the country in the same period.

TABLE I
Breast Cancer Associated with Pregnancy in Northern Ireland

| | |
|---|--------------|
| Population | 1.4 millions |
| Births | 337,342 |
| Breast Cancer in Pregnancy and Lactation registered at Centre | 45 cases |
| Breast Cancer Cases Registered | 3,031 |
| Breast Cancer Associated with Pregnancy | 59 cases |
| Pregnancy Complicating Breast Cancer (%) | 1.9% |

This table indicates that one case of carcinoma of the breast occurs for every 7,500 births, a figure considerably lower than that of White but rather similar to that of Finn (1952) who found 10 patients with breast cancer in 65,561 pregnancies.

The high figure of White may be accounted for by the fact that he quotes reports from several specialised units or hospitals where some degree of selection must have been inevitable. The figures from Northern Ireland on the other hand include all births in the country over that period, both hospital and domiciliary. In addition, the radiotherapy service covers the whole country and approximately 90 per cent of all new breast cancers occurring are registered at the Radiotherapy Centre. For geographical and other reasons there is very little population movement or loss of clinical material.

The table also indicates that in the eleven year period just over 3,000 new breast cancer cases were registered at the Radiotherapy Centre. In that time 59 patients were seen in which pregnancy complicated the condition, i.e., 45 cases where breast cancer appeared in pregnancy or lactation and 14 cases where pregnancy followed previously treated breast cancer. The figure of 1.9 per cent is almost identical to the 2 per cent figure quoted by White (1958) from several New York and Seattle hospitals but lower than the 2.9 per cent given earlier by the same author in a collected series of 43,931 cases (1955). These figures refer to breast cancer patients of all ages but when the child bearing age is considered, then pregnancy complicating breast cancer is not an uncommon occurrence. Most of the patients with this combination must be found in the 30 to 40 age group and this was the case in this present series (Tables 2 and 3).

TABLE II
Breast Cancer in Pregnancy and Lactation

| | | | |
|------------------------|-------|-------|-------|
| Age | 20-29 | 30-39 | 40-49 |
| Number | 3 | 26 | 16 |
| Average Age=37.0 years | | | |

TABLE III
Breast Cancer Treated Prior to Pregnancy

| | | | |
|------------------------|-------|-------|-------|
| Age | 20-29 | 30-39 | 40-49 |
| Number | 3 | 8 | 3 |
| Average Age=36.1 years | | | |

It was found that when we considered only breast cancer patients under the age of 40, 19 per cent of the patients, or almost one in every five, had concurrent pregnancy or became pregnant after treatment for breast cancer. This is a figure very similar to that of Treves & Holleb (1958) who reviewed 549 patients, 35 years of age or younger, finding that 14 per cent had concurrent pregnancy and 5.5 per cent became pregnant after treatment for their breast cancer.

Our youngest patient was a woman of 25 and the oldest, a woman of 45 years of age.

OBSTETRIC HISTORY

The previous obstetric history of both groups of patients is illustrated in Table IV.

TABLE IV
Breast Cancer and Pregnancy. Obstetric History

| <i>Previous Obstetric History</i> | <i>Cancer in Pregnancy and Lactation 45 Patients</i> | <i>Pregnancy following Treated Breast Cancer 14 Patients</i> |
|---|--|--|
| Nulliparous | 5 | 4 |
| Para 1 | 9 | 4 |
| Para 2 | 7 | — |
| Para 3 | 11 | 2 |
| Para 4 | 6 | 1 |
| Para 5 | 3 | 2 |
| Para 6+ | 4 | 1 |

This indicates that 14 patients out of 45 where breast cancer appeared during pregnancy or lactation, and 8 patients out of 14 where pregnancy followed previously treated breast cancer, were nulliparous or had one child. This quite clearly is a factor one would have to take into consideration on the question of therapeutic abortion or the advisability of future pregnancies.

Of the 59 cases registered at the Centre, 45 were patients where the breast cancer was seen either with pregnancy or lactation and 14 were patients where pregnancy occurred following previous breast cancer treatment. In 37 of these patients it was possible to produce a five year survival comparison and this is illustrated in Table V.

TABLE V

| <i>Category</i> | <i>Number of Cases</i> | <i>5 Year Survival</i> | <i>Per cent Survivors</i> |
|---|----------------------------|----------------------------|-------------------------------|
| (1) Onset before or during pregnancy | 21 | 7 | 33 |
| (2) Onset during lactation | 6 | 3 | 50 |
| (3) Pregnancy following treated breast cancer | 10 | 4 | 40 |
| (1) and (2) combined | 27 | 10 | 37 |

PROGNOSIS

As in most other series the cases have been divided into three categories; (1) where the carcinoma developed before or during pregnancy; (2) where the carcinoma was observed during the period of lactation and (3) where pregnancy followed previously treated breast cancer. From the point of view of 5 year survival it is probably reasonable to combine the first two categories assuming that many

carcinomas found in lactation were present and developed during pregnancy. As in practically all other series the numbers, of course, are small but the 5 year survival, 37 per cent for categories (1) and (2) combined is almost identical to that of Peters (1962) who reported 32.9 per cent in 70 cases. Figures from other series on 5 year survival include White (1955) 16.3 per cent, and Byrd et al (1962), 55.2 per cent. In many reports, however, it is difficult to determine overall 5 year survival rates because of the many qualifications such as operability, presence or absence of metastases, etc. The figures are certainly not very dissimilar to non-pregnant breast cancer patients when comparable age groups and stages are matched.

Practically all previous reports have indicated that the prognosis is influenced to a very great degree by the stage of pregnancy in which treatment was initiated. Our experience is illustrated in Table VI.

TABLE VI
Stage of Pregnancy in which Breast Cancer was Treated

| <i>Stage of Pregnancy</i> | <i>Number of Cases</i> | <i>5 Year Survival</i> | <i>Per cent Survival</i> |
|---------------------------|------------------------|------------------------|--------------------------|
| Treated in 1st Trimester | 5 | 4 | 80 |
| Treated in 2nd Trimester | 3 | 1 | 33 |
| Treated in 3rd Trimester | 3 | — | — |
| Treated after Pregnancy | 8 | 2 | 25 |
| Untreated | 2 | — | — |
| TOTAL | 21 | 7 | 33 |

This certainly suggests a higher survival rate in the first trimester and is very much in keeping with the experience of others. White (1958) found 16.3 per cent survivals in the first trimester, 8 per cent in the second and 9.7 per cent in the third. Peters (1962) reported 25 per cent for the first trimester, none for the second and 11 per cent for the third with a figure of 50 per cent for those treated after the termination of pregnancy.

Prognosis, too, could obviously be expected to bear a relationship to clinical staging and Table VII clearly confirms that the earlier the condition is detected the better the prognosis.

TABLE VII
*Survival in Relation to Clinical Stage
(Pregnancy and Lactation)*

| | <i>Number</i> | <i>5 Year Survivors</i> |
|---------|---------------|-------------------------|
| Stage 1 | 8 | 5 (62.5%) |
| Stage 2 | 13 | 5 (38.5%) |
| Stage 3 | 3 | 0 |
| Stage 4 | 3 | 0 |

There were no survivors in the six cases found in Stage 3 and Stage 4 whilst in the remaining 21 patients allocated to Stage 1 and Stage 2 there were 10 five year survivors, i.e., 47.5 per cent. The importance of determining involvement of homo-lateral axillary nodes will be referred to later.

PATHOLOGY

The pathology reports were not particularly helpful in this series, possibly because of the fact that almost half of the patients were treated by simple mastectomy, but it is interesting to note that there were 6 five year survivors out of 14 where the tumour was described as 'anaplastic carcinoma', i.e., 43 per cent.

MANAGEMENT

The actual treatment methods or techniques carried out in this particular series are illustrated in Table VIII. The table, if nothing else, demonstrates the involved tortured thinking brought to bear on what can often be a very difficult problem. Three patients were treated either by radiotherapy or some palliative procedure whilst in the remaining 18, treatment was by mastectomy, either simple or radical, in association with post-operative x-ray therapy, therapeutic abortion and/or castration. Most other reports indicate that the prognosis is influenced to a very great degree by the involvement of the homo-lateral axillary nodes, but in this particular series 9 patients were treated by simple mastectomy and consequently no information was available on this point. In the 9 patients treated by radical mastectomy positive glands were reported in five and of these one survived five years. In the other 4 patients with negative glands there were two five year survivors.

TABLE VIII
Management of Carcinoma of the Breast Associated with Pregnancy

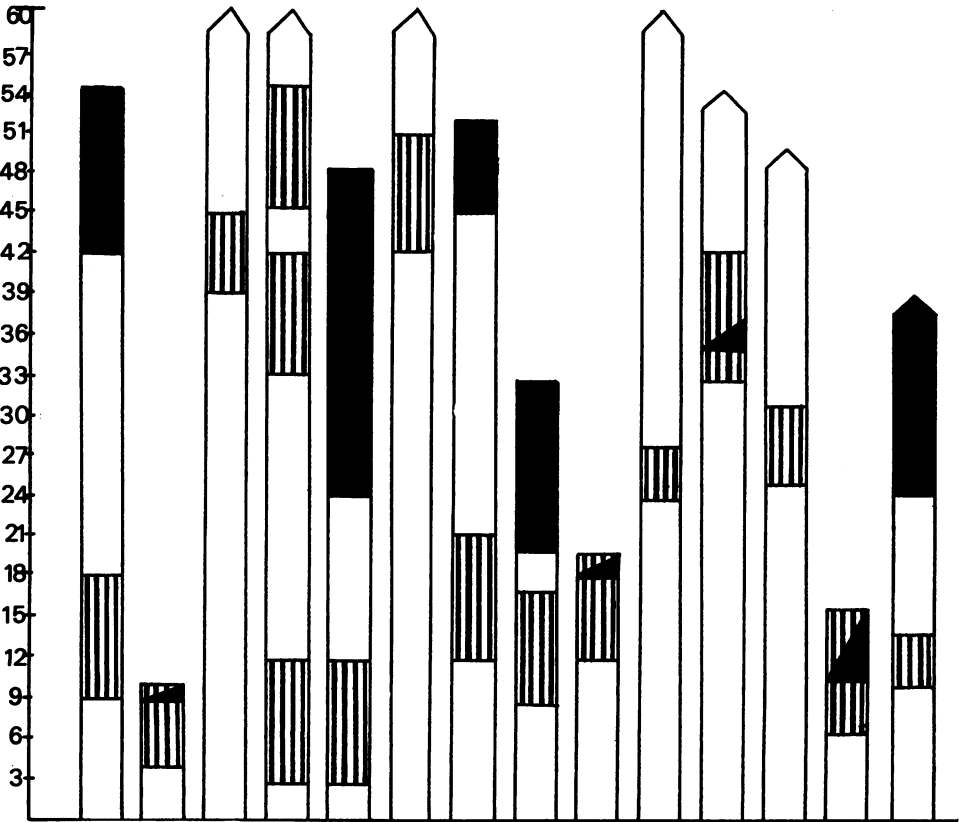
| | Number | Survival |
|---|--------|----------|
| Radical Mastectomy | 2 | — |
| Radical Mastectomy + X.R.T. | 4 | 1 |
| Radical Mastectomy + X.R.T. + X.R.M. | 1 | 1 |
| Radical Mastectomy + X.R.T. + Th. Abortion | 1 | 1 |
| Radical Mastectomy + X.R.T. + Th. Abortion + Oophorectomy | 1 | — |
| Simple Mastectomy + X.R.T. | 7 | 3 |
| Simple Mastectomy + X.R.T. + Oophorectomy | 1 | — |
| Simple Mastectomy + X.R.T. + X.R.M. | 1 | 1 |
| X-ray Therapy | 1 | — |
| Palliative Therapy | 2 | — |
| TOTAL | 21 | 7 |
| X.R.T. = X-ray Therapy X.R.M. = Radiation Menopause | | |

PREGNANCY FOLLOWING TREATED BREAST CANCER

In this particular group there were 14 patients in which pregnancy occurred following initial control of breast cancer. 10 patients were available for 5 year survival comparison and the position is illustrated in Figure 1.

Fig. 1.

Months



This shows 4 five year survivors, i.e., 40 per cent. Peters reports 32 per cent survivors out of 38, i.e., 72 per cent in a similar group, whilst White in a collected series reports 59 per cent five year survival. The literature certainly suggests that the prognosis in this particular group is good, but it must be kept in mind that this is a very select group in that the very nature of the disease itself eliminates, at an early stage, those patients with an aggressive form of cancer.

COMMENT

As more reports appear on the association of breast cancer and pregnancy the previously held pessimistic views are being replaced, to some extent, by a more optimistic approach to the problem. This present review would suggest or confirm that a more hopeful outlook is not entirely unjustified, but, even accepting this, it

has to be admitted that the combination often presents difficult, involved and, at times, almost insoluble problems. The treatment of breast cancer, even in ideal circumstances, can often be a depressing subject but, how much more so is it, when the patient is in her early thirties, when she may have small children and when two lives, not one, are perhaps dependent on the advice given or the decisions taken. Anyone who has had to deal with these cases, will readily appreciate the many considerable pressures that come into play so that rational thought and considered approach to the problem are often very difficult.

How then should such patients be handled? Review of the present group of patients and the literature would suggest that there is a great deal to be gained and very little to be lost by not treating the situation as an emergency, necessitating rapid and, perhaps, hasty decisions. A little delay, more observation of both patient and tumour, an attempt at objective assessment, and full discussion with all others possibly involved in treatment and management must be recommended even in the most difficult and poignant presentation. Practically all authors emphasise, too, that in the first instance, the pregnancy should be ignored altogether and the patient assessed for treatment in the same manner as an uncomplicated breast cancer patient. If the criteria are such as to indicate a radical or potentially curable approach then the problem should be dealt with on this basis.

Earlier in referring to Table VI attention was drawn to the fact that, in this series, and in reports from other centres notably those of Peters and White, the results achieved in the treatment of patients in the latter half of pregnancy were much worse than in those patients treated in the first few months. Recognising this, Peters suggests that, whenever possible, radical treatment for cancer detected in the second half of pregnancy should be delayed until the post-partum period at which time there appears to be a much higher survival rate. Obviously, when the initial diagnosis is made in the last few weeks of pregnancy there would be clear advantages in a minimum period of delay until either Caesarean section or induction were considered appropriate for safe delivery, but on the other hand, when diagnosed at an earlier stage it must be difficult not to recommend radical or definitive treatment. It is certainly very hard to understand why results achieved in those cases treated in the latter half of pregnancy should be so poor and also why delay in the treatment of such patients until the post-partum period should, or could, result in any appreciable improvement in results. It may possibly be that in the late stages of pregnancy, surgery on a distended vascular breast is a traumatic insult of such magnitude as to overwhelm the immune and other body defences, and certainly the evidence is such, and the results so poor, as to suggest that serious consideration be given to the policy advocated by Peters.

In this present series it can be seen that almost half the patients treated were submitted to simple mastectomy followed by radical x-ray therapy. This on reflection, was probably not the best approach in many cases, for there are at least two big advantages in radical mastectomy over simpler surgical procedures.

1. Following radical mastectomy there should, in most cases, be no question of radiation therapy, whereas, with simple mastectomy, radiation is considered to play a major role in treatment. Although the x-rays are directed to the upper chest and shoulder, scatter is inevitable and in the Adrian Committee Report of 1960 we note that the gonadal dose received in the treatment of breast cancer has been

estimated at 7.79r. It is not unreasonable to suggest that the foetus, in the early stages of pregnancy and when most vulnerable must be exposed to a similar dose, and this, in most circumstances, must be regarded as unacceptable.

2. In the radical mastectomy specimen an opportunity is afforded to determine the involvement or otherwise of the homolateral axillary nodes. White (1955), Miller (1962), Byrd et al (1962), Holleb and Farrow (1962) and Austin (1960) all refer to this as a most important factor in determining prognosis. This, of course, is true for non-pregnant breast cancer patients, but many reports on this particular association indicate that the prognosis for those patients without metastases is five to ten times better than those with metastases. Possession of such knowledge could, then, be regarded as vitally important when further management is discussed not alone with ones colleagues, but with the patient, the patient's husband or relatives.

The question of the termination of pregnancy inevitably arises in any discussion on the management of these cases and indeed there has been considerable controversy on the benefits of abortion. Many specialists have felt that immediate termination of pregnancy would improve the survival rate but there is little or no statistical evidence to confirm these views. The information available at present, indeed, would appear to suggest that no clear benefit can be demonstrated from abortion, and this is the view held by White (1955) in reviewing 1,375 cases from 144 published articles. A similar conclusion was reached by Peters (1962) in reporting 70 cases treated at the Ontario Cancer Institute, and a study of recent literature would only appear to confirm this opinion. One accepts that there are many factors to be taken into account in reaching a decision on this particular aspect of management, but equally, in view of the present available evidence, one would hesitate to recommend termination of pregnancy as a routine procedure in the operable breast cancer patient.

Apart from the advisability of therapeutic abortion, radiation or surgical castration will almost certainly come into consideration in the treatment of these patients. In assessing the possible benefits of such a procedure, it must be remembered that oophorectomy, as far as we know, cannot be regarded as a curative measure in the treatment of breast cancer. Review of the literature, too, would suggest that there is no proof indicating that oophorectomy influences the survival rate in breast cancer developing in pregnancy, and clearly there can be little or no indication for recommending castration as a routine measure in early potentially curable cases. Peters, indeed, suggests that in this particular instance the more favourable cases in the younger age group would be deprived of the possible benefits of future pregnancies by such a procedure.

So far reference has only been made to those patients with an early curable breast cancer discovered in pregnancy. If, on the other hand, the patient presents with advanced local disease and/or metastases, then the real problems or difficulties arise. If this, indeed, is the position, there can be no one treatment policy to recommend or follow but all the measures mentioned – surgery, radiation, therapeutic abortion, hormone therapy, castration, pituitary ablation, and chemotherapy may be tried singly or in combination. Invariably, the response to treatment recommended is minimal and, in the circumstances, the policy must be one of individualisation with many factors other than clinical ones, playing a more important role in determining or influencing the advice given and the measures

taken. Here indeed lies the real tragedy of breast cancer associated with pregnancy, for very often, in these circumstances, the apparently inevitable end result is the death of both baby and mother. Such an outcome certainly must leave a lasting impression on those associated with treatment and subsequently could very well influence, adversely, individual judgment on the management of even the earliest breast cancer in pregnancy. This, together with the low incidence of the particular association would suggest that centralisation of treatment of such patients, would almost certainly be beneficial. Not least of these benefits would be the fact that sufficient numbers could be compiled to enable proper statistical evaluation of many of the factors associated with treatment. One might best illustrate the infrequency of the association by referring again to the figures here in Northern Ireland which suggest that a general surgeon, on average, sees one such patient every eight to ten years.

Finally, reference must be made to that group of patients where pregnancy follows treatment for cancer of the breast. In this present series, there were 14 such patients and ten were available for evaluation. Four of the 10 were alive and well at five years. Here again numbers are very small, but reference has already been made to the 72 per cent five year survival figure of Peters and the 59 per cent of White in similar, but very much larger, groups. This would appear to be the experience of others, and the overall figures are such as to suggest that patients in this group do even better than breast cancer patients without pregnancy. This, of course, is a select group in that the very nature of the breast cancer eliminates, at an early stage, those patients with an aggressive form of the disease. Whilst this is true, problems will still arise and before offering advice many factors should be considered, i.e., age of patient, size of family, history and extent of the previously treated breast cancer, involvement or otherwise of the homolateral axillary nodes, the histologic grading and previous radiation or chemo-therapy. Many reports would suggest that pregnancy should be delayed for two years following mastectomy and although this is largely an arbitrary determination most would regard it as reasonable. If, however, many of the prognostic factors mentioned are poor then further delay should be advised for, indeed, one must keep in mind the fact that the combination of recurrent and/or metastatic breast cancer and pregnancy is truly a clinical catastrophe (Fig. 1) unlikely to be influenced to any degree by present day therapy.

SUMMARY

Three thousand breast cancer cases, registered at the Northern Ireland Radio-therapy Centre, were reviewed and pregnancy was found to complicate the condition in 59 patients, i.e., 2 per cent. Where only those patients under the age of 40 were considered 19 per cent had concurrent pregnancy or became pregnant after treatment of their breast cancer. In 45 of the patients the breast cancer appeared in pregnancy or lactation and in the remaining 14 pregnancy followed treatment of a breast cancer.

Management is discussed and the advantages of radical mastectomy over simpler surgical procedures is commented upon with the observation that radiation therapy would appear to have little part to play in the treatment of early cases. As in other series there was a higher survival rate in those cases treated in the early months of pregnancy with therapeutic abortion and castration apparently

having little or no bearing on the prognosis. It is suggested that these procedures, if not actually contra-indicated, should certainly not be recommended routinely in the operable or potentially curable patient.

In the cases reviewed it was noted that where breast cancer developed in pregnancy or lactation 37 per cent of the patients survived five years. This is a figure rather similar to other recently published reports and suggests or confirms that the prognosis, where breast cancer is associated with pregnancy, is not very different from similar groups of non-pregnant patients. In the group of patients where pregnancy followed previously treated breast cancer 40 per cent survived five years and the many factors believed to be relevant to the prognosis, or to be considered when advising on subsequent pregnancies are detailed. The review also indicates that one case of breast cancer may be expected for every 7,500 births and it is suggested that because of the infrequency of the condition and the many problems involved in management centralisation of the treatment of such cases might be usefully considered. The importance of objective discussion and assessment of such patients on the same basis as the uncomplicated breast cancer case is stressed. (Some of the points referred to in the discussion are illustrated in six case reports).

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ILLUSTRATIVE CASE REPORTS

CASE 1. *Patient M.M. Age 34. Para 3*

History

6 months history of lump in the left breast.

Attended own doctor in December 1955 when she was 7-10 weeks pregnant.

Pre-Operative Findings

Found to have lump the size of a hazel nut in the upper outer quadrant of the left breast. No nodes.

Treatment

Biopsy excision 15.1.1956.

Pregnancy terminated 21.1.1956.

Radical Mastectomy 24.1.1956.

X-ray therapy February 1956

Pathology Report

Biopsy "Anaplastic spheroidal cell carcinoma".

No residual tumour found in mastectomy specimen.

Subsequent History

March 1958 fourth child born alive and well.

April 1959, fifth child born alive and well.

Well 8 years later.

Comment

Reflection and subsequent history suggests that if pregnancy had been allowed to proceed disease would probably not have been activated.

CASE 2. *Patient K.McC. Age 29. Para 4*

History

Noted small swelling in right breast in July 1960. Referred to hospital.

Pre-Operative Findings

2 cm. mobile nodule in inner half of the right breast.

Treatment

Biopsy excision 6.8.1960.

X-ray therapy August 1960.

Pathology Report

"Anaplastic spheroidal cell carcinoma".

Subsequent History

Well until April 1963 when she became pregnant.

In June 1963 complained of bleeding from the nipple.

Mastectomy performed June 1963. Pathology report showed "Intraduct carcinoma".

Fifth child delivered December 1963—alive and well.

No evidence of recurrence or metastases three years later.

Comment

Apparent reactivation of disease during pregnancy.

CASE 3. *Patient D.C. Age 36. Para 5*

History

Noted lump in upper outer quadrant of right breast in August 1955. Showed it to own doctor and was operated on seven days later.

Pre-Operative Findings

1 cm. hard nodule which was not attached to skin or muscle. Node felt in axilla.

L.M.P.

24th July 1955.

Treatment

Radical mastectomy August 1955.

X-ray therapy September/October 1955.

Pathology Report

"Anaplastic spheroidal cell carcinoma" commencing in intraduct carcinoma but infiltrating widely. Nodes clear.

Subsequent History

In April 1956 was delivered of stillborn macerated baby.

Further child 1961.

Well 9 years after initial diagnosis.

Comment

Note stage of pregnancy at which x-ray therapy was administered. To-day such a case would almost certainly not be treated by post-operative radiation.

CASE 4. *Patient M.H.. Age 39. Para 1*

History

In December 1958 patient noticed three small nodules in the right breast. Attended own doctor and referred immediately to hospital.

Pre-Operative Findings

Three small nodules in the upper inner quadrant of the right breast. No nodes.

L.M.P.

30th November 1958.

Treatment

Biopsy 16.1.1959.

Simple mastectomy 23.1.1959.

X-ray therapy February 1959.

Pathology Report

"Extensive infiltration by a spheroidal cell carcinoma which had originated in widespread intraduct carcinoma but which is now infiltrating".

Subsequent History

Twins born 2.8.1959—six weeks premature.

First child stillborn and macerated.

Well 5 years later.

Comment

Note stage of pregnancy at which x-ray therapy was administered.

CASE 5. *Patient M.T. Age 26. Para 1*

History

In February 1960 noted lump in the left breast. Attended own doctor and referred immediately to hospital.

Pre-Operative Findings

Marked thickening in the upper outer quadrant of the left breast. No nodes.

Treatment

Biopsy 22.2.1962.

Simple mastectomy 27.2.1962.

X-ray therapy March 1962.

Pathology Report

"Massive tumour 6 x 5 x 2 cms.—intraduct carcinoma which has spread extensively outside the ducts and infiltrating widely."

Subsequent History

Became pregnant in October 1968—8 months later.

In March 1963 developed recurrence and metastases in scapula.

June 1963—Caesarean section under local anaesthetic.

Child died 2 hours later.

Patient died 1 week later

Comment

The pathology report would suggest that the patient should have been advised against further pregnancy for at least two years. Prognosis probably poor even if pregnancy had not supervened.

CASE 6. *Patient M.C. Age 42. Para 4*

History

In August 1962 patient noticed swelling in upper part of chest. Then noticed swelling in outer part of left breast.

Pre-Operative Findings

Large mass in outer part of left breast. No nodes. Hard, fixed swelling upper end of sternum. X-ray showed destruction of the manubrium.

Pregnancy

18.4.1962—L.M.P.

25.1.1963—E.D.C.

Treatment

Simple mastectomy and removal of accessible nodes—27.9.1962.

X.R.T. to chest wall and sternum—October 1962.

Pathology Report

"Anaplastic spheroidal cell infiltrating widely." No mention of nodes.

Subsequent History

Admitted to maternity hospital 7.12.1962. Had caesarean section for placenta praevia.

Child alive and well.

Ovaries inspected but not removed.

Has remained well since. X-rays indicate recalcification of sternum.

Well five years later.

Comment

Not included in 5 year survival results. Following treatment patient was only seen again some days after section.